oestrogen and pregnanediol excretion. In some instances gonadotrophin excretion was determined. Very small doses of conjugated oestrogen (Premarin) gave encouraging results in a group of patients who had been followed most carefully. A number of these patients clearly ovulated, and in some instances pregnancy followed.[6] Ethinyl oestradiol has also been used with some success in a dosage of 0.001 mg. That these small doses do stimulate F.S.H. secretion has recently been demonstrated by Stevens.[7] At the recent World Congress of Obstetrics and Gynaecology, held in Sydney, McBride reported on the successful induction of ovulation in 12 of 18 women treated with 0.001 mg. of ethinyl oestradiol daily for 10 days. Although only four pregnancies were reported at the time the number has risen to eight.[8]

Clomiphene citrate is a non-steroidal compound with both oestrogenic and antioestrogenic activity, but its precise mode of action in relation to ovulation stimulation is not clear. In view of the chemical similarity to chlorotrianisene (Tace) it is not unlikely that it may operate in a similar manner to very low dosages of Premarin or ethyl oestradiol.—I am, etc.,

Aylesbury, Bucks. H. J. E. COX.

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Nursing Services in General Practice

SIR,—I read with great interest the article on the above subject by Dr. J. Weston Smith and Mrs. E. M. Mottram (16 December, p. 672), and I would like to compliment them on the initiative and enterprise shown in meeting present-day problems in general practice. In all branches of medicine we need to look again at the established traditional ways of providing a service, particularly in view of the shortage of doctors in all three branches of the National Health Service. I would like to make a plea that the work of a nurse in a practice be undertaken by a fully trained district nurse attached to the practice. In a practice such as Dr. Smith's, the work could be undertaken by two nurses, one S.R.N. and one S.E.N., and this would include the work outlined in the article and the home-nursing and any treatment in the surgery.

The merit of this recommendation is that there would be no need to introduce another worker into the practice, which inevitably causes certain difficulties. The advantage of the attached district nurse undertaking practice duties is that she has a knowledge of, and direct access to other local authority health and welfare services—mental welfare officer, child care officers, home helps, medical loans, etc. This is particularly true of the district nurse with district training; and any other training to meet the particular needs of a practice can usually be arranged by the local authority.

In this county we have several district nurses, S.R.N. and S.E.N., attached to practices, and the scope of their work outside traditional district nursing is a matter that is left to the individual practice. The fear of interference by the local authority is much more imaginary than real, as details of working arrangements are fully discussed and agreed before attachment takes place. Not all doctors want district nurses attached to their practice, and not all district nurses are suitable for this work, but a great deal more can be done by experiment and trial to provide the nursing cover best suited to present-day general practice. We have found that where attachment schemes have been agreed better understanding and closer working relations have been established between general practitioners and nurses. It is the policy of this authority to foster attachment of district nurses to general practitioners, and I would be very willing to discuss such schemes with any general practitioner in the county who is interested.—I am, etc.,

County Health Offices, Mold, Flintshire. G. W. ROBERTS.

SIR,—It would be a pity to allow the highly significant article by Dr. J. Weston Smith and Mrs. E. M. Mottram (16 December, p. 672) to pass without comment.

The National Health Service set out to provide medical treatment free at the time. Patients were left with the responsibility of deciding when a doctor was needed. Now, 20 years later, we are told they are not prepared to accept this responsibility but require a new service to advise them whether they need a doctor, to treat illnesses not serious enough to require a doctor, and to secure the provision of free medicine for these minor ailments.

Thus, a nurse was able to deal with over a third of first visits (requested before 10.30 a.m.) in a two-man partnership, and in only 67 out of 537 first visits did she find it necessary to ask a doctor to call subsequently (Table I of the article). She might recommend the doctor to prescribe "a simple cough linctus or antacid." Not only did the patients accept the arrangement, they began to ask for the nurse directly, and the "threshold at which a visit is requested has become lower." Dr. Weston Smith has dramatically extended the scope of the National Health Service. Without breaking the regulations, without an Act of Parliament, perhaps without even a word with the Minister, he has introduced a new service which will no doubt uncover further hidden needs. Others are doing the same by introducing, for example, organ transplantation. They will be competing with Dr. Weston Smith for the available public funds. For, although this article confirms that doctors all over the country are performing the duties of a nurse or wise grandmother at a time of medical manpower shortage, it does not offer the nurse as a solution. On the contrary, the doctors had the impression that, "far from lessening the amount of work done by doctors the amount of consultative work has actually increased."

Here, then, is a vivid illustration of the insatiable demand for medical care and of public readiness to abdicate personal responsibility in health matters. We can choose whether to extend the scope of the National Health Service in the direction of serious illness and introduce charges for minor illness or whether to extend it in all directions at even lower standards. We can even choose to support Dr. Weston Smith's new service and pay through taxation. But, at a time when child poverty needs relief and old-age pensions are inadequate to provide both food and fuel, there is something seriously wrong with a system which can nevertheless provide an ever-increasing army of expensive social workers, doctors, and nurses to visit, console, and treat the victims.—I am, etc.,

Holywell, Flintshire. DAVID L. WILLIAMS.

Early Work with Blood Transfusion

SIR,—Sir Geoffrey Keynes (18 November, p. 410) refers to the tercentenary of blood transfusion. The idea of transferring blood from a healthy person to a sick one had been mooted long before 1667, and apparently attempts had been made to carry out transfusions. In 1492 Pope Innocent VIII died after receiving blood from three youths,[1] all of whom also died, so that it would seem to be a fair presumption that this transfusion was a massive one, and even if by some near miracle all three of the donor bloods were compatible with that of His Holiness the circulation must have been grossly overloaded.

My primary concern in referring to the article mentioned is to draw attention to the fact that in Dublin in the early eighteenth century there was at least one man interested in the possibility of carrying out intrahuman transfusion. This was Richard Pockrich (1695–1759). His own description of the process is nowhere to be found, but a presumably full account appears as a footnote to "The Projector," a "Poem in an Epistle to Richard Pockrich, Esq.," by the satirist Brockhill Newburgh.[2] Though this was published in 1769 it had apparently been written in 1743. Newburgh was related to his subject on the latter's distaff side.

As the description appears in this work it reads "Take an inflex Tube in the Nature of a Scyphon, fix it at the extreme Ends in the Veins of two different Persons to be open'd to receive them, the one youthful, adult, and sanguine, the other aged, decripid, and wither'd. . . . The redundant fermenting Blood of the one, will immediately flow like Wine decanted into the empty shrivell'd Veins of the other. The Effects will be found no less uncommon than surprising. The wither'd Skin Braces, the Flesh plumps up and softens, the Eyes sparkle, the Visage blooms, and the Blood is invigorated with new Supplies of vital Warmth. When the Blood or Spirits begin to fail, or any Symptoms of Mortality do approach, the Experiment is only to be repeated, and so on, with equal success *ad infinitum*. 'Tis a common practice in Housewifry, to renew strong stale Beer for twenty, thirty, or any other Number of Years. Why may not the Fluids of the human Body be renew'd in like Manner? 'Tis certain the Experiment has been try'd on other Animals with Success and if such creatures have happen'd afterwards to die, it has been wholly owing to the Neglect of the propos'd Discipline."

Pockrich apparently realized either that there were major difficulties or possibly never made any effort to carry out practical experiments, but he was so convinced that his blood-transfusion scheme could be successful that he proposed that a Bill be introduced in Parliament which would provide that a person could be legally declared dead when

he reached 999 years, and that among others the local clergyman might claim the fees he would normally receive for the burial service. Pockrich was a most remarkable rather offbeat character who produced visionary schemes which caused him to be referred to at a recent meeting of the Section of History in the Royal Irish Academy of Medicine in Ireland as a poor man's Leonardo da Vinci. —I am, etc.,

Blackrock, Dublin. JOHN FLEETWOOD.

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"Acrosclerosis"

SIR,—The recent article by Drs. A. W. Dellipiani and M. George (11 November, p. 334) on the syndrome of sclerodactyly, calcinosis, Raynaud's phenomenon, and telangiectasia, prompts us to report a further case.

A 75-year-old lady was admitted because of a hemiplegia due to cerebrovascular disease. She was noted to have tight shiny skin on some of her fingers, together with very rigid flexion deformities. Both thumbs showed dislocation of the distal interphalangeal joints. The tissues of the affected fingers were curiously hard and thickened. There were telangiectases on the lips,

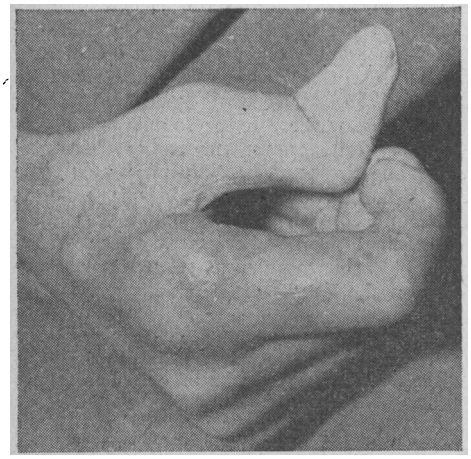

FIG. 1.—Hand showing deformity and discharging area.

FIG. 2.—*X*-ray of hand.

face, and the palmar surface of the affected fingers.

Until the onset of the hemiplegia, which has been accompanied by severe dementia, she had been able to look after herself—including cooking, shopping, and doing housework—with some social support. History from friends and relatives gave no evidence of bleeding from the nose or gastrointestinal tract, nor was there any family history of bleeding. The patient had been troubled with Raynaud's phenomenon for as long as anyone could remember.

Later during her admission the skin of one of the affected fingers became inflamed and broke down, resulting in the discharge of a white pultaceous material, which on analysis proved to be composed of calcium and phosphate. The rest of the physical examination was not contributory.

Investigations revealed no definite evidence of involvement elsewhere, but the serum proteins were low at a total of 4.7 g./100 ml., with 3.4 g./100 ml. albumin, and 1.3 g./100 ml. globulin; electrophoresis showed a rather low γ and a high α_2 globulin. The white cell count persisted at a level of 20,000/cu. mm. and she has an iron deficiency anaemia with a haemoglobin of 7.6 g./100 ml. and a mean corpuscular haemoglobin concentration of 27%. However, these findings can be explained by the presence of a large bed-sore. *X*-ray of the hands showed extensive soft tissue calcification. There being no history or clinical evidence of dysphagia, a barium swallow did not seem justified in our patient. An electrocardiograph revealed nothing compatible with scleroderma.

This patient's history and progress support the contention that this syndrome has a benign course, but the deformities produced in our patient must have been at least to some degree incapacitating.

We are grateful to Dr. Harold Davis for his permission to publish details of this patient.

—We are, etc.,

STEPHANIE A. DAVIES.
FRED WOODROFFE.
Royal Free Hospital, London W.C.1.

Disinfectants and Plastic Mop Heads

SIR,—Prompted by the letters of Dr. D. A. Leigh and Miss Christine Whittaker (12 August, p. 435) and Dr. L. Steingold, Mr. L. J. Dunn, and Mr. S. Henman (2 September, p. 620) we have investigated the effect of polyvinyl acetate, polyurethane, and cellulose sponges on the germicidal activity of various phenolic disinfectants.

One-inch (2.5-cm.) cubes of the plastics were immersed in 50 ml. of the disinfectant solution, allowed to soak for 24 hours; then the solution, with plastic still immersed, was inoculated with 0.5 ml. of a culture of *Pseudomonas aeruginosa*. Reinoculation was made each day over a seven-day period, and 7½, 15, and 30 minutes after each inoculation a 0.1-ml. sample of the disinfectant was withdrawn and examined for surviving bacteria. Not more than 10 survivors from the 0.1-ml. sample at 30 minutes was regarded as a satisfactory result. Controls of disinfectant without plastic were satisfactory over the whole seven-day period even at the seven-and-a-half-minute sample.

Polyvinyl acetate had the greatest effect. At the normal dilutions of use none of the disinfectants retained activity for more than the first inoculation. Polyurethane had only slightly less effect than polyvinyl acetate, none of the disinfectants at their normal dilution of use surviving more than one or two inoculations. Cellulose sponge, however, did not affect germicidal activity to any great extent, the use-dilutions of all the disinfectants being satisfactory during the complete seven-day inoculation period.

When the disinfectants were tested at one and a half to three times their normal use-dilutions against polyvinyl acetate and polyurethane activity was retained for periods ranging from two to seven days. We found some evidence that the plastics and disinfectants behave in different ways—for example, disinfectant A was less affected by polyvinyl acetate than disinfectant B, while with polyurethane the reverse occurred. We repeated the investigation with polyvinyl acetate and polyurethane, pre-soaking the sponge for 24 hours in disinfectant before transferring it into a fresh solution at the same concentration for testing. While interference with the germicidal activity could still be found it was much less severe than in the earlier investigation, all the disinfectants retaining activity at one to two times their normal use-dilution over the seven-day period.

It would appear that cellulose sponge is the plastic of choice to avoid loss of phenolic germicide from solution. With other sponge materials the problem can be overcome by pre-soaking (preferably in overstrength) disinfectant and/or changing the solutions frequently as a matter of good housekeeping.

—We are, etc.,

Microbiology Laboratory, Izal Limited, Thorncliffe, Sheffield. J. W. GIBSON.
MAVIS LOXLEY.
JANET RIDGE.

Carcinogenicity of Tobacco and Tobacco Smoke

SIR,—Dr. M. Glass has asked two pertinent questions (5 August, p. 373), reiterated (9 December, p. 621), to which, he says, he has had no answer. I doubt if anyone can answer completely the vexed question of the pathogenesis of lung cancer in cigarette smokers, but the possibility that "some other essential factor, in addition to cigarette smoke," may be involved cannot be excluded. The important point is that in the absence of cigarette *smoking*, as opposed to *smoke*, to which non-smokers are often exposed, other possible factors that may be concerned in the evolution of cancer of the lung are less carcinogenic.

The absence of neoplastic reactions in the skin of the often heavily stained fingers of habitual chain-smokers may be related to the paucity, or absence, of pilosebaceous follicles in the lateral aspects of the fingers; assuming that the distillate from the tobacco contains fat-soluble potential carcinogens. There is experimental evidence from several independent sources which would support this explanation, which I reviewed in a different connexion.[1]

The more difficult problem of the sequence of events in the pathogenesis of lung cancer in man, though unsolved, is not without clues. The demonstration[2] of basal cell hyperplasia and squamous metaplasia in the tracheobronchial tree in smokers, with or without lung cancer, as a more frequent finding than in non-smokers, and the observation[3] that the increased incidence of primary lung cancer in smokers is practically limited to the epidermoid and undifferentiated